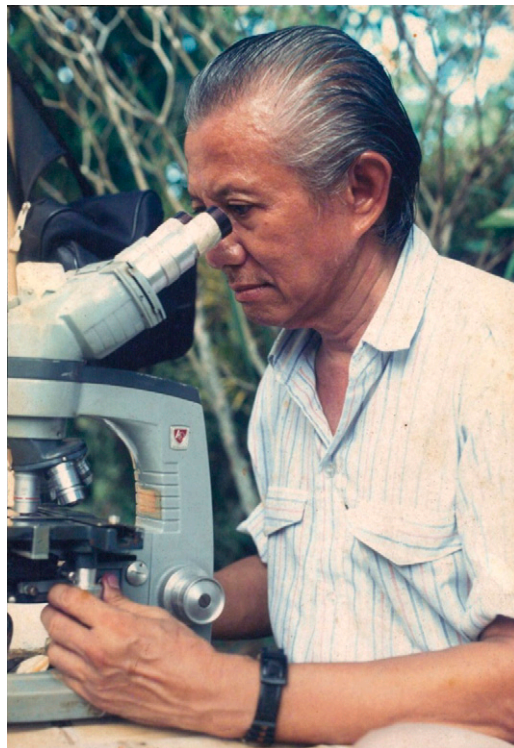


## Tribute



### Purnomo Projodipuro (April 11, 1934–May 10, 2013)

The many dozens of our Society members who were clinicians and scientists assigned to the US Naval Medical Research Unit #2 (NAMRU-2) in Jakarta, Indonesia, during its 40-year presence (1970–2010) in that nation, along with many Indonesian colleagues, are also alumni of the School of Purnomo. This diminutive, quiet, and unassuming scholar and gentleman so profoundly affected nearly all of us professionally and personally that his imprint is as meaningful and lasting as our collective alma maters. His strongest legacy as a mentor and exemplar is that separating those two dimensions—personal and professional—should be virtually impossible. Our work, he instructed us, is a matter of the heart and soul. He considered parasitology and its proper study and practice an imbedded aspect of his inner being. He gave the work a palpable spiritual energy and chided those individuals who approached it dispassionately or impersonally. We strive to convey here the energy and output that was Purnomo as a medical and zoological parasitologist and a supreme master teacher and explorer of these fields.

Purnomo was born of Javanese parents at Pontianak on the southwestern coast of Borneo in what was, in 1934, part of The Netherlands East Indies. As a boy at Pontianak, he witnessed firsthand some of the most gruesome and

cruel aspects of the Pacific War—only rarely speaking of the events and always with an abject and dark despair at such inhumanity. The family escaped by boat to Jakarta sometime in 1942. At age 11 years, he saw the birth of the Republic of Indonesia and ultimately, new opportunities and possibilities. Purnomo earned a BSc in biology from the National University followed immediately by a second BSc in public health from the University of Indonesia. Remaining in Jakarta, he worked in the Department of Parasitology, Faculty of Medicine, University of Indonesia through the 1950s under the famous Professor Lie Kian You, founder of that department and a role model who Purnomo deeply admired and emulated. Lie Kian You instilled in Purnomo the personal character of humanitarian scientific work as well as the mantra, “we forget what we see; we remember what we hear; we know what we do.” Purnomo’s prolific teaching over the decades drove students to doing and practicing under his watchful eyes.

In 1972, Purnomo began work as a medical parasitologist at NAMRU-2 Jakarta Detachment. After 35 years of uninterrupted service to that laboratory, he retired in 2007. Purnomo’s many research accomplishments (he published over 150 papers in journals of parasitology and medicine) were formally acknowledged in 1994 by the Helminthological Society of Washington, which bestowed on him an honorary membership in a ceremony at the Uniformed Services University of the Health Sciences. Purnomo tirelessly and passionately instructed many hundreds of students in parasitology at no less than seven prominent medical schools

---

\*Address correspondence to J. Kevin Baird, Jalan Diponegoro No.69, Eijkman–Oxford Clinical Research Unit, Jakarta 10430, Indonesia. E-mail: jkevinbaird@yahoo.com

in Jakarta (Trisakti University, University of Tarumanegara, Christian University of Indonesia, Atmajaya Catholic University, University of Indonesia, and others) over more than 40 years. Practitioners taught by Purnomo overwhelmingly populate the parasitology and tropical medicine landscape of Indonesia today.

During the 1970s, Purnomo worked with Felix Partono, D.T.D., Soeroto Atmosoedjono, and Sri Oemijati in discovering and describing *Brugia timori* as a new human filarid parasite. He would also work closely with J.R.P. during the late 1970s in describing a new species in the genus *Wuchereria* naturally occurring in silvered leaf monkeys of Kalimantan, *W. kalimantani*. He also worked with J.R.P. in describing the parasites of the lesser one-horned Javanese rhinoceros.

These many superb helminthological contributions led to an invitation to study at the Laboratoire de Zoologie (vers), Muséum national d'Histoire naturelle in Paris under Odile Bain and Alain G. Chabaud, where Purnomo described a new genus and species of onchocercid filaria from an American sloth that he named *Chabfilaria jonathani*. Codiscoverers Bain, Chabaud, and J. P. Dedet requested of Purnomo the specific epitaph to honor a young boy who was a lively presence in the "Labo" while accompanying his parents during his American father's thesis research on rodent malaria at the Muséum. Shortly after this stay in Paris, the young boy died of cancer. A decade later, Purnomo unwittingly crossed paths with those parents, who were newly stationed at NAMRU-2 as naval medical officers. During a celebration at the home of J.K.B. in Jakarta, Purnomo and the parents were overjoyed to meet each other again after a 10-year hiatus. Learning of the boy's death, Purnomo was overcome with emotion, falling speechless into the arms of the still grieving father (T.L.R.) and mother. This extraordinary and unexpected reunion moved all three to raw tears and consummation of their bond in the memory of a son. This event illustrates and firmly ratifies the deeply personal dimension that Purnomo assigned to his scientific endeavors.

Purnomo was a master practitioner of both fencing and a deeply spiritual Javanese form of martial arts derived from China emphasizing qi or chi life force and its application in barehanded self-defense. Purnomo spoke often of the chi and its proper balance empowering the intellect. He competed internationally in fencing as a young man. Through his sportsmanship, he sought to fortify the strength of his body to strengthen his mind: "men sana in corpore sano," he was taught. His passionate fencing competition brought him into friendships with General A. H. Nasution, General Sutomo, and Hamengkubowono IX (the Sultan of Yogyakarta and captain of the team taken to China for a meet), three men being deeply revered national heroes of the war for independence for the Republic of Indonesia. Sound mind, balanced spirit, strong body—Purnomo put the full weight of these hard-earned attributes to his humanitarian work.

The portrait of Purnomo at his microscope is not posed. This candid shot captured his intensity and zeal when in the process of rendering a diagnosis for a patient. Giemsa-stained slides neatly littered Purnomo's workstation—many dozens of them at a time—and he would work from before sunrise to after midnight or even the entire night getting them read and cleared away. At any hour over these long sessions,

his intense gaze and steely determination would not even slightly falter. His Zen-like state and astonishing stamina at the microscope derived from his chi and mastery of the Javanese martial art that harnessed it. Late one evening at the microscope, a visibly fatigued J.K.B. received mentoring from Purnomo—he held up a randomly chosen slide from his bench and wordlessly insisted that it be looked upon. In a firm but nearly whispered calm voice, Purnomo said, "do not think of this as an object or a task. It is the health of someone's son or daughter, mother or father. Never allow yourself to become tired doing this work. Quit and rest before that happens." The professional expectations of the microscopist and the accomplishment of the research product were irrelevant when measured against the human whose fate lay within the stained blood smear and its proper examination.

The speed and quality of Purnomo's work amazed even the most experienced experts among us, exemplified by the identification of *Plasmodium falciparum*, *P. vivax*, *P. malariae*, and *P. ovale* in a single blood smear (later confirmed by polymerase chain reaction).<sup>1</sup> He would habitually complete in one marathon session the reading of a set of slides normally requiring several days for even confirmed master microscopists at NAMRU-2. He startled skeptical colleagues by correctly identifying (on the basis of the visual appearance of otherwise negative blood films) the incipient development of patent malaria infections in research subjects. "This one has malaria," he would inform his coworkers. Because protocol demanded that a second microscopist confirm the parasite—but no parasite was to be seen, as Purnomo patiently explained—the smear would be recorded as negative. Purnomo's early diagnosis was invariably proven correct, with parasitemia typically being confirmed within 1 or 2 days. Although earning the right to ironic comment or boast when the first rings appeared, he instead expressed disappointment in the "needless delay" in providing therapeutic relief to the subject. Purnomo could neither objectively explain nor instruct this skill, and we accepted it as most likely to be a complex constellation of many subtle visual clues specific to prodromal malaria. Purnomo, thus, extended human boundaries through a transcendent skill, seeing what others could not, validating through action and deed the power of the spiritual-professional continuum that characterized his rich life. All of us graduates of the School of Purnomo were profoundly changed by these experiences, lifted beyond ourselves by one of the most inspiring scientific men of our generation.

Purnomo likened the search for parasites in blood films to destroying an evil force—a force elusive of a lazy or incompetent examiner, he explained sternly and darkly. Undetected, the parasites shall be left to do their evil mischief of sickness and death. Purnomo's countenance would then brighten to explain that, however, facing a superbly trained and properly motivated microscopist, their ugly play would be halted, and health would be restored. Purnomo trained many hundreds of malaria microscopists in Indonesia and visitors to Indonesia. Into each of them, he instilled this core understanding of the humanity of a well-done microscopic examination. The excellent microscopy of Purnomo and his students reliably informed many thousands of laboratory diagnoses of malaria, many hundreds of blood surveys, and many dozens of scientific studies and clinical

trials. He pointed out the presence of *P. malariae* in a set of slides provided from another southeast Asian country for reference, not just *P. falciparum* and *P. vivax* as described, thereby resetting the objectives of that country's national malaria control program. As another project, he validated a set of reference slides that were then used internationally to teach malaria microscopy. The people benefiting directly or indirectly from Purnomo's efforts and expertise—people enjoying health after being stalked by illness but accurately diagnosed and effectively treated—are too vastly numerous to count. In this way, Purnomo lived up to the simple philosophical instruction for life received from his father, Dulmuntalib Projodipuro: bring harm to no one; protect from harm as many people as possible.

Complications of diabetes stalked Purnomo in his later years, and he became nearly completely blind in 2005. Although his own hunt for the evil force called malaria came to an abrupt end in his 72nd year, he dedicated himself thereafter to the continued teaching of parasitology to young students, enabling their ability to carry on that noble hunt. J.K.B. visited Purnomo at the homes of his sons and daughters at Bandung, Bogor, and Jakarta during this period. At each visit, Purnomo proudly displayed his teaching aids and bragged of his students abilities and progress. He knew each lifecycle chart by feel and pointed to stages by rote memory of his treasured teaching materials. Although sightless, his eyes shone as they always had with that extraordinary energy and humanity that each of us recognized and revered.

The very many students, colleagues, and friends of Purnomo will miss his stirring humanity and extraordinary devotion to his technical pursuits. Purnomo lost his dear wife Any Rochmana in 1997 after raising their nine children: Agus Maryono, Dwiana Purnami, Andi Tertianto, Yanuarita Purwantini, Novianti Purwaningrum, Heri Purnomo, Maulana Heryantoro, Endang Saptawati, and Joko Hastono. He is survived by all of his children and their 18 children and 12 grandchildren. Purnomo spent his last years in the loving care and kindness of this devoted family.

J. KEVIN BAIRD  
IOBAL ELYAZAR  
HASAN BASRI  
KRISIN CHAND  
*Eijkman–Oxford Clinical Research Unit*  
*Jakarta, Indonesia*

STEPHEN L. HOFFMAN  
*Sanaria Inc.*  
*Rockville, Maryland*

JAMES R. PALMIERI  
*Virginia Tech University*  
*Blacksburg, Virginia*

THOMAS L. RICHIE  
EILEEN FRANKE-VILLASANTE  
DAVID J. FRYAUFF  
*Naval Medical Research Center*  
*Silver Spring, Maryland*

COLIN OHRT  
*Walter Reed Army Institute of Research*  
*Silver Spring, Maryland*

NARAIN PUNJABI  
*International SOS*  
*Jakarta, Indonesia*

JASON D. MAGUIRE  
*Portsmouth Naval Hospital*  
*Portsmouth, Virginia*

DAVID T. DENNIS  
*US Centers for Disease Control*  
*Fort Collins, Colorado*

INGE SUTANTO  
*Faculty of Medicine University of Indonesia*  
*Jakarta, Indonesia*

ELLEN ANDERSEN  
*Harpers Ferry, West Virginia*

PRIANTO SISMADI  
*Sismadi Health Science and Research Institute*  
*Jakarta, Indonesia*

## REFERENCE

1. Purnomo P, Solihin A, Gomez-Saladin E, Bangs MJ, 1999. Rare quadruple malaria infection in Irian Jaya Indonesia. *J Parasitol* 85: 574–579.